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ABSTRACT

The relationship between aspects of preschool socialization experiences and sex-typed behavior was investigated in this study. Three hypotheses were tested: (1) that preschool play activities differ consistently in structure level, (2) that there are sex differences in participation in activities classified as high or low structure, and (3) that children of both sexes are more compliant in highly structured activities and show more novel use of materials and self-initiated activity changes in low structure activities. The behaviors and activities of 83 children, ages 2 1/2 to 5, and their teachers in five preschool classrooms were coded by trained observers during daily free-choice activity periods. The activities were coded for degree of structure by the amounts of individual and group feedback provided by the teacher. An additional index of structure consisted of a parent questionnaire concerning availability of an adult model in the home for 20 analogous activities. Preschool activities were found to differ in level of structure on all indices. Boys participated more than girls in the low-structure activities, and girls participated more than boys in the high-structure activities for all indices. Compliance occurred more often in the high- than low-structure activities as indexed by feedback, but the reverse occurred on the index of modeling. Novel behavior occurred more often in low-structure activities on the index of individual feedback. Compliance and novelty were a function of activity, not of sex. Sex differences independent of activity were found only for self-initiated activity. (Author/SS)

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# THE RELATION OF CHILDREN'S ACTIVITY PREFERENCE TO SEX-TYPED BEHAVIOR

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# The Relation of Children's Activity Preference to Sex-typed Behavior

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The focus of the research reported in this paper is early childhood socialization experiences that may be antecedents of sex differences in achievement behavior in later childhood and adulthood. High levels of achievement from middle childhood on are associated with personality attributes or skills such as independence, initiative, and non-conformity for both boys and girls. Most of the attributes associated with achievement are culturally stereotyped as masculine. Females who show high levels of achievement behavior, independence and nonconformity tend to identify with masculinity and to have interests in masculine activities that date from early childhood (Stein & Bailey, 1973).

The socializing experience of interest here is that provided by play activities. Young children's play can be organized into units called activities such as bike riding, play house, blocks, painting, and the like. Play activities are critical means for developing skills in young children (Bijou, 1961; Bruner, 1973; Weisler & McCall, 1976).

The major thesis of this research is that sex-typed activities cultivate sex differences in personality attributes through the different skills and behaviors they prompt and maintain. Other investigators have followed a similar line of reasoning in suggesting that masculine stereotyped activities promote certain cognitive skills, particularly visual spatial ability, more than feminine stereotyped activities (Connor & Serbin, in press; Connor, Serbin, & Schackman, in press; Sherman, 1967, 1971). The importance of activity participation is suggested by the fact that sex differences in

activity preference occur earlier and more reliably than do sex differences in personality characteristics (Block, 1976; Maccoby & Jacklin, 1974; Parten, 1933).

One critical dimension on which masculine and feminine activities appear to differ is the amount of structure provided. Structure is defined as the extent to which there are externally imposed rules or guidelines about appropriate ways of performing an activity or task. In children's play experiences, activity structure can be provided through frequent observation of the adult analogue of the preschool activity or through feedback, instructions, or directions from an adult. In the former case, information about appropriate behavior in the activity comes from observing adults performing the activity; in the latter case, adult directions or instructions provide information concerning appropriate behavior in the activity. The first hypothesis tested in the present study was that masculine activities (or activities preferred by boys) would be less structured than feminine activities.

A second hypothesis is that unstructured activities teach the participants a set of skills that we have labeled "ability to create structure." When an activity has relatively few rules or guidelines about exactly what to do, children may be more likely to create their own structure -- that is, to develop or provide their own information, rules, or parameters concerning appropriate behavior in the activity. Behavior such as novel use of materials, independence, or taking initiative might occur more frequently in unstructured activities. By contrast, structured activities may encourage children to follow patterns established by others through behaviors like compliance, passivity, or dependence. In effect, structured activities may teach

children to fit into structures created by others rather than establishing their own patterns.

We hypothesized that the skill of "creating one's own structure" is one of the skills learned by young children through participation in masculine activities, because masculine activities are less structured. If, as proposed, feminine activities are more structured, and therefore provide fewer opportunities for learning to create one's own structure, participants will be less likely to develop skills of independence and initiative and more likely to show compliance. This hypothesis implies that it is the structure of the activity rather than its sex stereotyped quality that is critical, so one would expect boys and girls to behave similarly when they are participating in the same activity.

To investigate the potential differential socialization experiences provided by sex-typed activities for young children, three major hypotheses were tested: 1) that preschool play activities differ consistently in structure level, 2) that there are sex differences in participation in activities classified as high or low structure, and 3) that children of both sexes are more compliant in highly structured activities and show more novel use of materials and self-initiated activity changes in low structure activities.

Eighty-three children, ages 2½ to 5, in five preschool classrooms were observed during daily free choice of activity periods. Classroom organization was similar across all classrooms. There were five or six major activity options arranged in "centers" each day, plus assorted games, puzzles, and other toys.

The preschool teachers were masters, or undergraduate level practicum students, supervised by a faculty member. Trained observers using a 20-second interval observation code recorded 1) the activities in which the children participated, 2) the amounts of compliance, novel use of materials, and self-initiated activity changes, 3) the amount of teacher feedback (instructions, directions, commands, questions) received in each activity. Children were observed for 4-minutes at a time, and observations alternated between males and females.

The first hypothesis was that activities differ in structure level. Two indices of activity structure were based on teacher feedback: 1) the amount of individual feedback to children in the activity and 2) the amount of group feedback given to the children. Feedback was defined as task-related instructions, directions, questions or comments about the child's behavior from the teacher. A third structure index was the availability of adult models performing the analog of the preschool activity in the home environment. We hypothesized that frequent modeling of an activity by adults gives children information about the appropriate or expected behavior in an activity which they can imitate. Model availability was assessed by a questionnaire sent to the preschool parents. The parents rated 50 activities on the degree to which children saw adults performing similar activities in the home.

In the final analysis, the list of 50 activities was collapsed to 20 because of low frequency of some specific activities. For each index of structure, activities differed. This was tested for the model availability structure index by an analysis of variance of parent ratings. There were significant differences among activities on model availability ratings by parents ($F = 26.59$, $p < .0001$). Activity means from the parent questionnaire

data ranged from 3.0 to 1.2 on a scale where 3 indicated frequent or daily model availability and 1 indicated infrequent or occasional (monthly or yearly) model availability for an activity.

For individual feedback and group feedback, the total score for each activity was calculated for each classroom separately. Correlations among classrooms are shown in Table 1. The amount of individual and group feedback given particular activities across classrooms was not highly consistent: the correlations overall were low. For example, art received large amounts of feedback in some classrooms but not in others.

Within each classroom, the correlations among the three indices of structure (model availability, individual and group feedback) were generally low. They are shown in Table 1.

Because the structure indices within classrooms were not highly correlated with each other, they were treated as three independent dimensions in the analysis of children's behavior. For the model availability dimension, the 20 activities were classified in four levels of structure: high (for example, play house), medium high (for example, carpentry), medium low (for example, painting), and low (for example, blocks).

For the individual feedback and group feedback dimension, activities were also classified into four levels, but the classification was done separately for each class. That is, those activities with highest individual feedback in classroom A were placed in the high level for that classroom, and those with the highest individual feedback in B were placed in the high level for that classroom. For example, high individual feedback activities in classroom A were: painting, carpentry and plumbing, water and sand table, board games, and puzzles. In the B classroom, high individual feedback

activities were: science, play dough and clay, art, trucks and trains, and play house. The classroom activities were similarly categorized into four levels on the group feedback dimension.

The second hypothesis was that children's participation in high and low structure activities would be sex-typed. As expected, boys participated more than girls in the low structure activities, and girls participated more than boys in the high structure activities, despite the variety of activities classified in the various levels of structure. Three analyses of variance on the rate of participation were performed, one for each structure dimension. In each analysis, sex and classroom were the between group factors and the structure dimension was the repeated measure. For each of the three structure dimensions, there was a significant interaction of sex by structure. The F ratios appear in Table 2. The means for boys and girls in each structure level are shown in Figure 1. The girls' means that are starred are significantly different from means for boys at that level of structure. The interaction involving classrooms indicated that there were classroom differences in these patterns. Inspection of the means by classroom indicated that the sex differences in participation occurred more in some classrooms than in others, but there was no classroom in which the pattern was reversed.

The third hypothesis was that children's compliance, novel use of materials and self-initiated activity changes would vary as a function of activity structure, regardless of sex. That is, we expected that boys and girls would behave similarly when they were in similar activities. This prediction was partially supported for compliance, and novel behavior, but not for self-initiated activity changes.

Compliance scores were equated for opportunities to comply by dividing compliance by individual feedback for each child. There were significant main effects of each of the three structure dimensions on compliance. The means are shown in Table 3. For the individual and group feedback indices of structure, the rate of compliance was higher in the high structure activities than in the low structure activities. Again, the interactions involving classrooms indicate that this pattern was more pronounced in some classrooms than others. The pattern for model availability was not in the expected direction. There were higher rates of compliance in the low model availability activities than in those classified as high model availability.

As expected, there were no main effects for sex, or any interactions of sex by structure on the rate of compliance. This provides surport for the hypothesis that the activity and corresponding structure level encourages compliance behavior regardless of the sex of the activity participant.

Although the overall occurrence of novel behavior was low, with virtually none occurring in several classrooms, the individual feedback by classroom interaction was significant at the .001 level. The cell means indicate that, when novel behavior did occur, it was usually in activities with low rates of individual feedback (see Table 3). Although non-significant effects for group feedback were found, the means were in the same direction.

The only significant effect on self-initiated activity change was a main effect of sex. Boys initiated activity changes more than girls did.

Three hypotheses investigating early childhood socialization experiences were tested. Preschool activities were found to differ in level of structure, according to the amounts of individual and group teacher feedback, and by model availability of the activities. Rate of participation in high and low structure activities was sex-typed for all indices of structure. Boys participated more than girls in the low structure activities, and girls participated more than boys in the high structure activities. In addition, compliance occurred more often in activities with high levels of structure as provided by individual and group feedback, but also occurred more often in activities that were infrequently modeled by adults. Novel behavior, though rare, occurred more often in activities that were low in structure as defined by individual feedback. These behavior differences were a function of activity, not of sex. The only behavior on which there were sex differences independent of activity was self-initiated activity changes.

The importance of this finding is that participation in activities may encourage and maintain activity-specific behaviors regardless of sex. Other literature has documented that compliance and novel use of materials are sex-typed. Girls display more compliance, while boys show more rates of novel or inventive behavior (Block, 1976; Maccoby & Jacklin, 1974). Yet in the present study, these behaviors were directly related to the structure level of the activity, and to participation in activities, not sex of the child. These findings support the idea that sex-typed behaviors are learned through participation in activities differing in structure.

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TABLE 1

CORRELATIONS AMONG THREE INDICES OF
ACTIVITY STRUCTURE FOR FIVE CLASSROOMS

GROUP FEEDBACK

| Classroom | Classroom 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | | .53** | .67*** | .59*** | .14 |
| 2 | | | .22 | -.11 | .15 |
| 3 | | | | .28 | -.18 |
| 4 | | | | | .00 |

INDIVIDUAL FEEDBACK

| Classroom | Classroom 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1 | | .33 | -.17 | .27 | -.07 |
| 2 | | | .45* | -.02 | .33 |
| 3 | | | | -.02 | .36 |
| 4 | | | | | -.25 |

CORRELATIONS OF MODEL AVAILABILITY (MA),
INDIVIDUAL FEEDBACK (IF) AND GROUP FEEDBACK (GF)

| Classroom | MA x IF | MA x GF | IF x GF |
|---|---|---|---|
| 1 | -.19 | .44* | .12 |
| 2 | -.02 | .54* | .04 |
| 3 | .00 | .25 | .56** |
| 4 | -.13 | .19 | .17 |
| 5 | .10 | .19 | .13 |

* significant at $p < .05$ ** significant at $p < .01$

*** significant at $p < .001$ **** significant at $p < .0001$

TABLE 2

ANALYSIS OF VARIANCE OF RATE OF PARTICIPATION, COMPLIANCE, NOVEL BEHAVIOR, AND SELF-INITIATED ACTIVITY CHANGES

F Ratios and Significance Levels

| Source | df | participation | compliance | novel behavior | self-initiated changes |
|---|---|---|---|---|---|
| | | INDIVIDUAL FEEDBACK | | | |
| Between | | | | | |
| sex | 1 | 1.75 | 3.08 | .91 | 10.55** |
| class | 4 | 3.8** | 4.65*** | 3.5** | 5.67*** |
| s X c | 4 | .81 | 1.47 | .48 | 1.79 |
| error | 73 | | | | |
| Within | | | | | |
| structure | 3 | 6.1*** | 3.56** | 2.24 | .30 |
| s X sex | 3 | 8.9**** | .09 | .32 | .05 |
| s X class | 12 | 8.9**** | 1.57 | 3.17**** | .73 |
| s X c X s | 12 | 3.5**** | 1.40 | 1.16 | .74 |
| error | 219 | | | | |
| | | GROUP FEEDBACK | | | |
| Between | | | | | |
| sex | 1 | .56 | 3.57 | .76 | 10.63** |
| class | 4 | 7.6**** | 5.07*** | 3.56** | 5.29*** |
| s X c | 4 | .92 | 1.28 | .46 | 1.67 |
| error | 73 | | | | |
| Within | | | | | |
| structure | 3 | 48.6**** | 2.25 | 1.93 | .12 |
| s X sex | 3 | 7.1**** | .77 | .12 | .09 |
| s X class | 12 | 9.2**** | 2.62*** | 1.17 | .69 |
| s X c X s | 12 | 3.9*** | 1.11 | .12 | .81 |
| error | 219 | | | | |
| | | MODEL AVAILABILITY | | | |
| Between | | | | | |
| sex | 1 | 1.8 | 3.0 | .91 | 10.55** |
| class | 4 | 3.8* | 4.65** | 3.56** | 5.67*** |
| s X c | 4 | .81 | 1.44 | .48 | 1.80 |
| error | 73 | | | | |
| Within | | | | | |
| structure | 3 | 28.8**** | 7.73**** | .39 | 1.17 |
| s X sex | 3 | 11.4**** | 1.22 | .15 | .06 |
| s X class | 12 | 4.1**** | 2.65** | 1.52 | .99 |
| s X c X s | 12 | 1.0 | .90 | .47 | .77 |
| error | 219 | | | | |

* significant at $p < .05$ ** significant at $p < .01$

*** significant at $p < .001$ **** significant at $p < .0001$

TABLE 3

MEAN COMPLIANCE DIVIDED BY OPPORTUNITIES
FOR COMPLIANCE FOR FOUR LEVELS OF STRUCTURE

| | IF | GF | MA |
|---|---|---|---|
| Low | .31 | .34 | .49 |
| Medium Low | .56 | .50 | .52 |
| Medium High | .53 | .59 | .65 |
| High | .56 | .51 | .29 |

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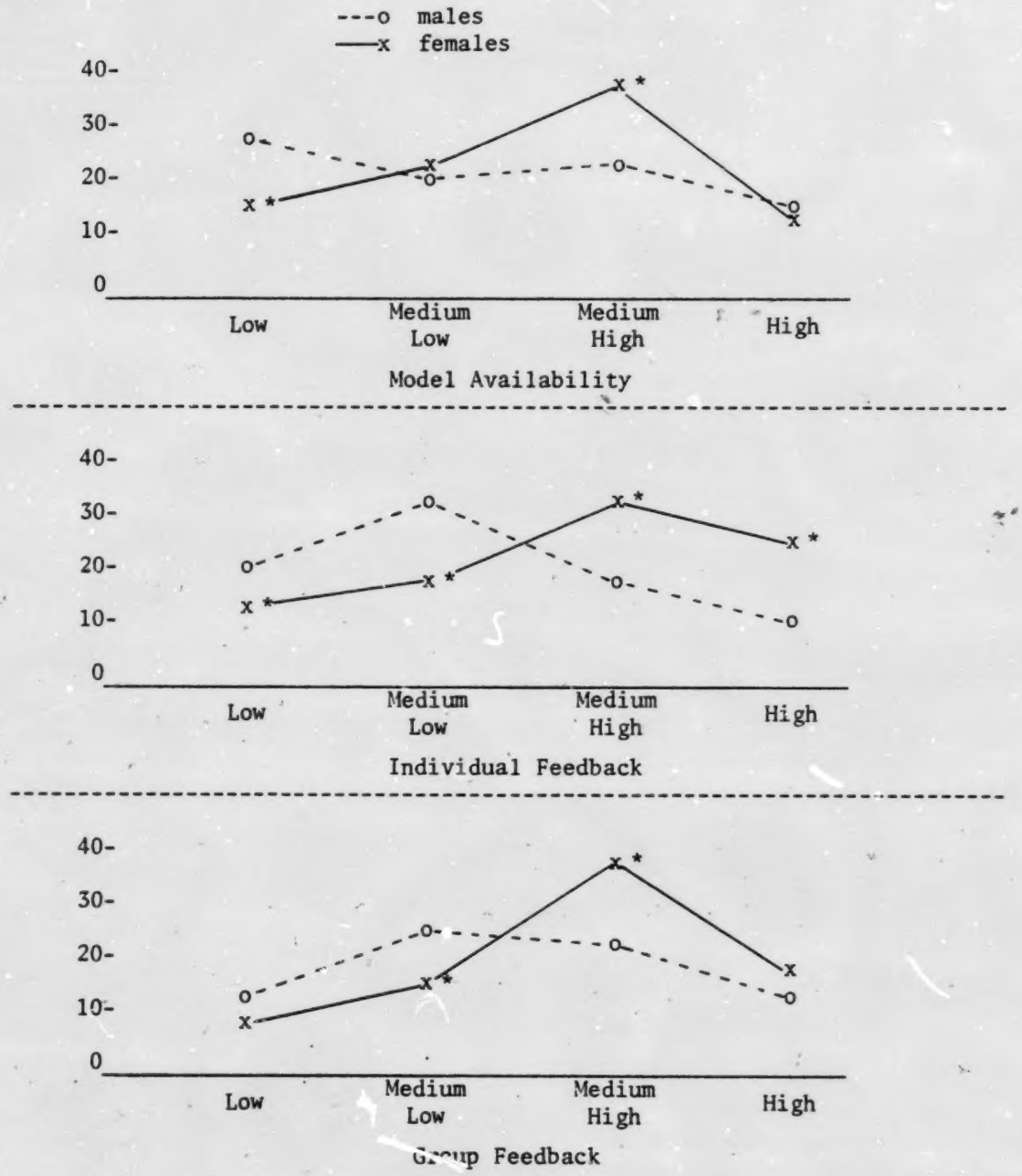
MEAN NOVEL USE OF MATERIALS
DIVIDED BY TIME IN ACTIVITY

| | IF | GF | MA |
|---|---|---|---|
| Low | .02 | .040 | .03 |
| Medium Low | .05 | .03 | .02 |
| Medium High | .009 | .01 | .01 |
| High | .01 | .00 | .03 |

IF = Individual Feedback
GF = Group Feedback
MA = Model Availability

FIGURE 1

RATE OF PARTICIPATION OF BOYS AND GIRLS
IN ACTIVITIES DIFFERING IN STRUCTURE




* Significant at $p<.05$. Tests of significance were performed using a simple F test of significance of cell means (Winer, 1962, p. 340).